

Application No.: 10/062,258

Docket No.: HO-P02314US1

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A detector arrangement that is adapted for measuring radiation from selected detection areas in a microfluidic device comprising: a disc with an axis of symmetry, and at least one detection area each of which is associated with a detection microcavity, said microcavity being part of a microchannel structure in which aliquots of liquid can be transported and processed, and said microcavity containing a substance causing radiation to be measured, wherein said arrangement comprises:

(a) a detector head with a focal area that has dimensions such that it is capable of covering only a part of the detection area,

(b) a disc holder comprising a means I that enables the focal area to transverse the surface of the disc in an essentially circular manner ~~or a means II that enables the focal area to transverse the surface of the disc in an essentially radial direction,~~

(c) an angular aligning system for recognizing the angular position of a part area which at a particular time is covered by the focal area, and

~~(d) a radial aligning system for recognizing the radial position of a part area which at a particular time is covered by the focal area, and~~

~~(d) (e)~~ a controller that controls means I and ~~when present, means II~~ causing the focal area to transverse the detection areas in an annular zone of the disc, and the detector head collects radiation in a preselected manner from individual subareas within at least one of the detection areas in said annular zone.

2. (Cancelled)

3. (Original) The arrangement of claim 1, wherein said detector head is used for laser induced fluorescence.

4. (Original) The arrangement of claim 3, wherein said laser induced fluorescence is combined with a confocal technique.

5. (Cancelled)

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6. (Cancelled)
7. (Original) The arrangement of claim 1, wherein said disc comprises a home position mark.
8. (Currently amended) The arrangement of claim ~~7~~ 1, wherein said means I comprises a spinner.
9. (Currently amended) The arrangement of claim ~~8~~ 7, wherein said angular aligning system comprises an encoder in which the grades of the encoder are linked to angular positions on the disc relative to the home position mark.
10. (Currently amended) The arrangement of claim ~~9~~ 23, wherein said means II comprises a translation responder for moving the detector head in a radial direction.
11. (Original) The arrangement of claim 1, wherein said disc is made of plastic material.
12. (Original) The arrangement of claim 11, wherein said plastic material is black.
13. (Currently amended) The arrangement of claim 1, wherein said substance ~~is~~ has been immobilized in the detection microcavity during flow conditions while liquid is passing through the microcavity as part of said transportation and processing.

Claims 14-20 (Cancelled).

21. (New) A detector arrangement that is adapted for measuring radiation from selected detection areas in a microfluidic device comprising: a disc with an axis of symmetry, and at least one detection area which is associated with a detection microcavity containing a substance causing radiation to be measured, wherein said arrangement comprises:

(a) a detector head with a focal area,

(b) a disc holder comprising a means I that enables the focal area to transverse the surface of the disc in an essentially circular manner

(c) an angular aligning system for recognizing the angular position of a part area which at a particular time is covered by the focal area, and

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(d) a controller that controls means I causing the focal area to transverse the detection areas in an annular zone of the disc, and the detector head collects radiation in a preselected manner from individual subareas within at least one of the detection areas in said annular zone

wherein said aligning system is separate from the detector head.

22. (New) The arrangement of claim 1, wherein the angular aligning system is separate from the detector head.

23. (New) The arrangement of claim 1, further comprising:

(a) a means II that enables the focal area to transverse the surface of the disc in an essentially radial direction and

(b) a radial aligning system for recognizing the radial position of a part area which at a particular time is covered by the focal area.

24. (New) The arrangement of claim 23, wherein both aligning systems are separate from the detector head.

25. (New) The arrangement of claim 21, wherein the focal area has dimensions such that it covers at least one selected detection area which is at the same angular position.

26. (New) The arrangement of claim 21, wherein the focal area has dimensions such that it covers only a part of the detection area.

27. (New) The arrangement of claim 21, further comprising:

(a) a means II that enables the focal area to transverse the surface of the disc in an essentially radial direction and

(b) a radial aligning system for recognizing the radial position of a part area which at a particular time is covered by the focal area.

28. (New) The arrangement of claim 27, wherein the radial aligning system is separate from the detector head.